



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**20.08.2008 Bulletin 2008/34**

(51) Int Cl.:  
**A47K 3/28 (2006.01)**

(21) Application number: **08002359.1**

(22) Date of filing: **08.02.2008**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR**  
 Designated Extension States:  
**AL BA MK RS**

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(30) Priority: **13.02.2007 GB 0702766**  
**13.08.2007 GB 0715755**

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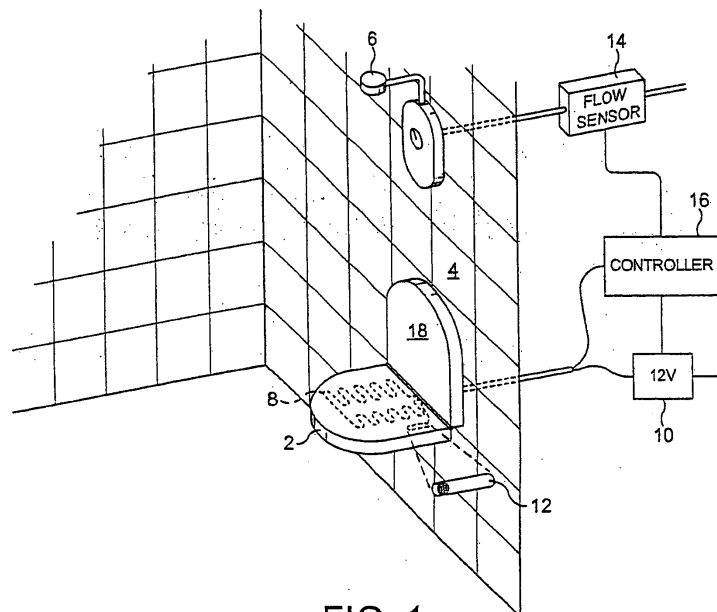
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(54) **Shower seat**

(57) A shower seat (2) includes a heating element (8) for warming the seat. A power supply (10) for the heating element is connected to a controller (16). In addition, a flow sensor (14) for detecting the supply of water to the shower (6) is connected to the controller (16) and a switch (12) for detecting whether the seat (2) is in a

seating position or a storage position is also connected to controller (16). Controller (16) controls power supply (10) to turn the heating element (8) on when the seat is moved from the storage position to the seating position, and to turn the heating element off when water is supplied to the shower (6).



**FIG. 1**

## Description

**[0001]** The present invention relates to a shower seat for use by an individual such as an elderly or disabled person when showering.

**[0002]** Shower seats are widely provided in showers for disabled or elderly people to sit on when showering.

**[0003]** The seats must be made from waterproof material.

**[0004]** However, a problem occurs with the comfort of seats made from such a material.

**[0005]** The present invention has therefore been made with this in mind.

**[0006]** According to the present invention, there is provided a shower seat, a seat heater and a controller for the seat heater, the controller being operable to receive a signal indicating supply of water to the shower and to control the supply of power to the seat heater such that the heater is turned off when water is supplied to the shower.

**[0007]** These features enable the shower seat to be heated safely.

**[0008]** Preferably, the shower seat is moveable between a seating position in which a person may sit on the seat and a storage position, and the seat heater is activated to heat the seat when the shower seat is moved from the storage position to the seating position.

**[0009]** The present invention also provides a shower seat installation kit for installing such a system and a shower seat for use in such a system.

**[0010]** Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a view with a shower seat in a seating position; and

Figure 2 shows a view with the shower seat in a storage position.

**[0011]** Referring to the figures, a shower seat 2 is connected to the wall 4 of a shower room beneath a shower 6.

**[0012]** The shower seat 2 is formed from a waterproof material and has a heating element 8 therein.

**[0013]** A 12 volt power supply 10 is provided to supply power to the heating element 8.

**[0014]** In addition, a switch 12 is mounted within the seat 2 to detect whether the seat is in the seating position (as shown in Figure 1) or the storage position (as shown in Figure 2). In this embodiment, the switch 12 has the form of a tube with two electrical contacts at one end and a ball bearing that is free to move within the tube. The switch 12 is mounted such that, in the seating position, the ball bearing travels to one end of the tube creating a connection between the electrical contacts. When the seat is in the storage position, the ball bearing travels to the other end of the tube, so that the connection between the electrical contacts is broken.

**[0015]** A flow sensor 14 is provided to detect the supply

of water to the shower 6.

**[0016]** The power supply 10, switch 12 and flow sensor 14 are connected to a controller 16.

**[0017]** More particularly, the controller 16 receives a signal from the flow sensor 14 indicating that water is being supplied to the shower 6. In addition, the electrical contact state of the switch 12 enables the controller 16 to determine whether the seat 2 is in the seating position or the storage position. The connection between the controller 16 and the power supply 10 enables the controller 16 to turn the power supply 10 on and off in dependence upon whether water is being supplied to the shower 6 and also in dependence whether the seat 2 is in the seating position or the storage position.

**[0018]** In this embodiment, the controller 16 is arranged to turn the power supply 10 on and off as follows:

- The controller 16 turns the power supply 10 on to heat the heating element 8 when the seat 2 is in the seating position (Figure 1) and no water is being supplied to the shower 6. In this way, the heating element 8 is activated by movement of the seat 2 from the storage position to the seating position.

- The controller 16 turns the power supply 10 off so that no power is supplied to the heating element 8 when water is being supplied to the shower 6, irrespective of whether the seat 2 is in the seating position or the storage position. In this way, the heating element 8 can be operated safely because no water and power are present at the same time.

- The controller 16 turns the power supply 10 off when the seat 2 is in the storage position. In this way, controller 16 deactivates the heating element 8 in the event that the heating element 8 is activated (for example by movement of the seat 2 for cleaning, etc.) and the seat 2 is returned to its storage position without water being supplied to the shower 6.

**[0019]** Many modifications and changes can be made to the embodiment described above.

**[0020]** For example, in the embodiment above, the seat 2 is moveable between a storage position and a seating position, and the heating element 8 is turned on when the seat is in the seating position. However, instead, the seat 2 may be fixed in the seating position and the power supply 10 may be activated to supply power to heat the heating element 8 in response to the actuation of a switch on a wall, etc by a user. Similarly, even if seat 2 can move between a storage position and a seating position, switch 12 may be omitted and power supply 10 may be controlled with a user-actuable switch mounted for example on a wall outside the shower room. In both cases, however, controller 16 would still be arranged to prevent the supply of power to the heating element 8 when water is supplied to the shower 6.

**[0021]** In the embodiment above, controller 16 controls

power supply 10 to turn off the power for the heating element 8 when the seat 2 is in the storage position. Instead, or in addition, controller 16 may include a timer and may be arranged to control power supply 10 to turn the power to the heating element off when a user-set time has elapsed after the heating element was turned on.

**[0022]** In the embodiment described above, the connection between the flow sensor 14 and controller 16 comprises a wire. However, instead, the connection may be via a wireless link.

**[0023]** In the embodiment described above, switch 12 is provided to detect whether the seat 2 is in the seating position or the storage position. However, other types of switch or other types of sensor may be provided to detect when the seat is in the seating position and when it is in the storage position.

**[0024]** In the embodiment described above, heating element 8 is provided within seat 2. However, instead, heating element 8 may be provided on the underside of seat 2 for example in a recess, and holes may be provided through seat 2 to facilitate the transfer of heat from the heating element 8 to a person sitting on the seat 2.

**[0025]** A heating element may also be provided in the back rest 18 of the shower seat.

**[0026]** Other modifications and changes could, of course, be made.

## Claims

### 1. A shower installation, comprising:

a shower (6);  
 means (14) for sensing the supply of water to the shower;  
 a shower seat (2) having a heater (8) for warming the seat;  
 a power supply (10) for the heater; and  
 a controller (16) arranged to control the supply of power to the heater such that the heater is turned off when water is supplied to the shower.

### 2. A shower installation according to Claim 1, wherein:

the shower seat (2) is moveable between a seating position in which a person may sit thereon and a storage position;  
 the shower installation further comprises means (12) for determining whether the seat is in the seating position or the storage position; and  
 the controller (16) is further arranged to control the supply of power to the heater (8) such that the heater is turned on when the seat (2) is determined to be in the seating position and no water is being supplied to the shower (6).

### 3. A shower installation according to Claim 2, wherein the controller (16) is further arranged to control the

supply of power to the heater (8) such that the heater is turned off when the seat (2) is determined to be in the storage position.

5 4. A shower installation according to any preceding claim, wherein the controller (16) is further arranged to control the supply of power to the heater (8) to turn the heater off after a predetermined time.

10 5. A shower seat installation kit, comprising:

a shower seat (2) having a heater (8) for warming the seat;

a power supply (10) for the heater; and

15 a controller (16) operable to receive a signal from a detector (14) indicating the supply of water to a shower, and operable to control the supply of power to the heater (8) such that the heater is turned off when the signal from the detector (14) indicates that water is being supplied to the shower (6).

20 6. A shower seat installation kit according to Claim 5, wherein:

the shower seat (2) is moveable between a seating position in which a person may sit thereon and a storage position;

the kit further comprises position determining means (12) for determining whether the seat (2) is in the seating position or the storage position; and

the controller (16) is further operable to receive a signal from the position determining means (12) indicating the position of the shower seat (2), and is operable to control the supply of the power to the heater (8) such that the heater is turned on when the signal from the position determining means (12) indicates that the seat (2) is in the seating position and the signal from the detector (14) indicates that no water is being supplied to the shower (16).

45 7. A shower seat installation kit according to Claim 6, wherein the controller (16) is further operable to control the supply of power to the heater (8) such that the heater is turned off when the signal from the position determining means (12) indicates that the seat (2) is in the storage position.

50 8. A shower seat installation kit according to any of Claims 5 to 7, wherein the controller (16) is further operable to control the supply of power to the heater to turn off the heater (8) after a user-set time.

55 9. A shower seat, comprising a waterproof seat (2) having an electrical heater (8) for warming the seat.

10. A shower seat according to Claim 9, wherein the electrical heater (8) comprises an electrical heating element within the seat or on the underside of the seat.

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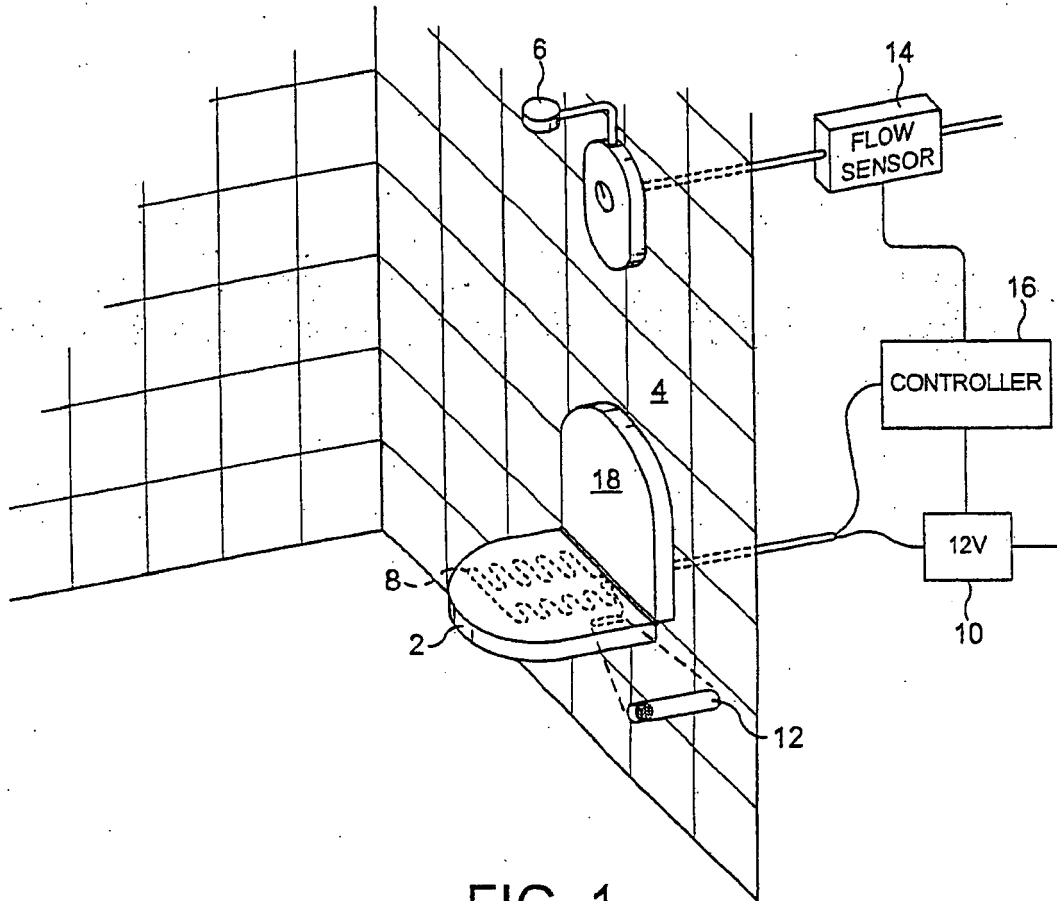


FIG. 1

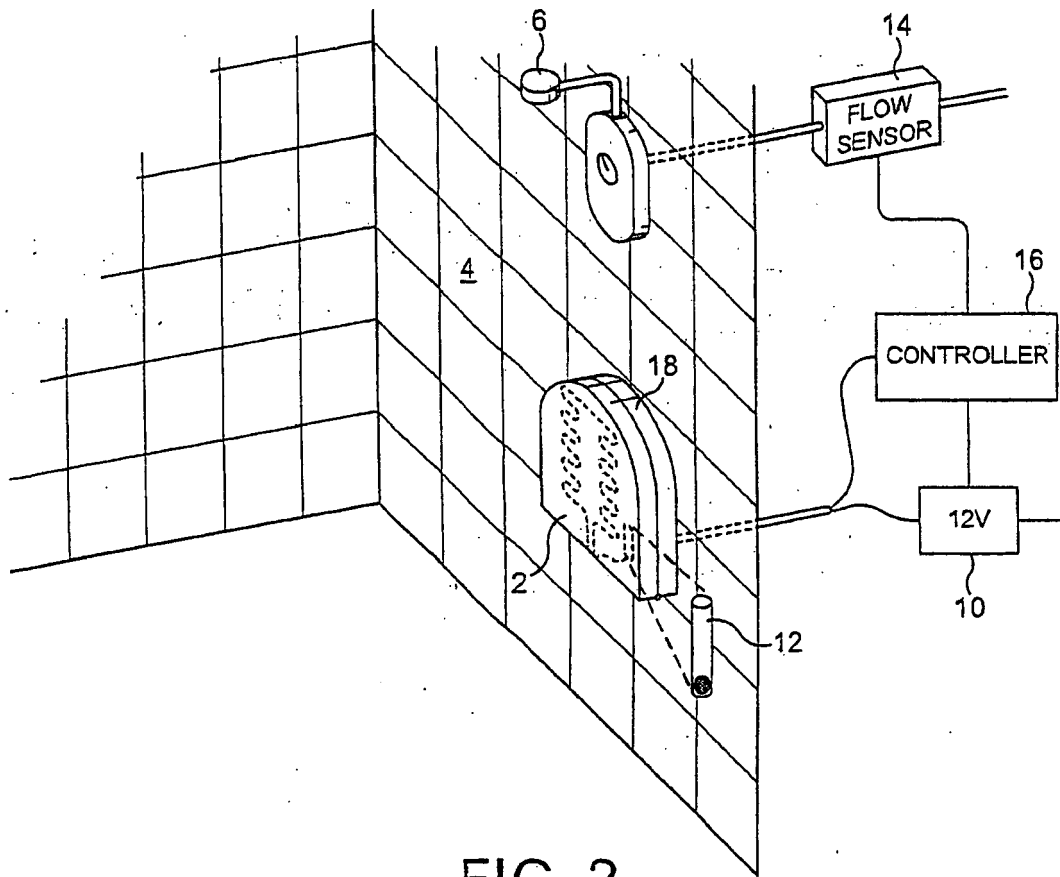


FIG. 2